SA TR ISO/IEC 24028:2024 ISO/IEC TR 24028:2020



# **Technical Report**

# Information technology — Artificial intelligence — Overview of trustworthiness in artificial intelligence



#### SA TR ISO/IEC 24028:2024

This Australian Technical Report was prepared by IT-043, Artificial Intelligence. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 11 April 2024.

This Technical Report was published on 03 May 2024.

The following are represented on Committee IT-043:

Australian Computer Society

Australian Healthcare and Hospitals Association

Australian Human Rights Commission

Australian Industry Group

Australian Information Industry Association

Australian Institute of Company Directors

Australian Institute of Health & Safety

Australian Securities and Investments Commission

CHOICE

Consult Australia

Consumers Federation of Australia

**CSIRO** 

Ethics, AI and ADM Professional Group

**Gradient Institute** 

Human Factors and Ergonomics Society of Australia

National Association of Testing Authorities Australia

**NSW Data Analytics Centre** 

Queensland AI Hub

Royal Australian and New Zealand College of Radiologists

Therapeutic Goods Administration (TGA)

University of Melbourne

University of New South Wales

University of Technology Sydney

Western Sydney University

#### **Keeping Standards up-to-date**

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting: <a href="https://www.standards.org.au">www.standards.org.au</a>

# **Technical Report**

# Information technology — Artificial intelligence — Overview of trustworthiness in artificial intelligence

First published as SA TR ISO/IEC 24028:2024.

#### **COPYRIGHT**

- © Standards Australia Limited 2024

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

### **Preface**

This Technical Report was prepared by the Standards Australia Committee IT-043, Artificial Intelligence.

The objective of this document is to survey topics related to trustworthiness in AI systems, including the following:

- approaches to establish trust in AI systems through transparency, explainability, controllability, etc.;
- engineering pitfalls and typical associated threats and risks to AI systems, along with possible mitigation techniques and methods; and
- approaches to assess and achieve availability, resiliency, reliability, accuracy, safety, security and privacy of AI systems.

The specification of levels of trustworthiness for AI systems is out of the scope of this document.

This document is identical with, and has been reproduced from, ISO/IEC TR 24028:2020, *Information technology — Artificial intelligence — Overview of trustworthiness in artificial intelligence.* 

As this document has been reproduced from an international document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

## **Contents**

Pr	eface		ii				
Fo	reword		<b>v</b>				
In	troductio	on	vi				
1							
2	•						
<b>3</b>	3 Terms and definitions 4 Overview						
_							
5	Existing 5.1	g frameworks applicable to trustworthiness  Background					
	5.2	Recognition of layers of trust					
	5.3	Application of software and data quality standards	8				
	5.4	Application of risk management					
		Hardware-assisted approaches					
6		olders					
0	6.1	General concepts					
	6.2	Types					
	6.3	Assets					
		Values					
_							
7	Recogn 7.1	ition of high-level concerns					
	7.1	Responsibility, accountability and governance Safety					
8		abilities, threats and challenges	14				
	8.1	General					
	8.2	AI specific security threats					
		8.2.1 General					
		8.2.2 Data poisoning 8.2.3 Adversarial attacks					
		8.2.4 Model stealing 8.2.5 Hardware-focused threats to confidentiality and integrity 8.2.5					
	8.3	AI specific privacy threats					
	0.5	8.3.1 General					
		8.3.2 Data acquisition					
		8.3.3 Data pre-processing and modelling					
		8.3.4 Model query					
	8.4	Bias					
	8.5	Unpredictability					
	8.6	Opaqueness					
	8.7	Challenges related to the specification of AI systems					
	8.8	Challenges related to the implementation of AI systems					
		8.8.1 Data acquisition and preparation					
		8.8.2 Modelling					
		8.8.3 Model updates					
	0.0	8.8.4 Software defects					
	8.9	Challenges related to the use of AI systems					
		8.9.1 Human-computer interaction (HCI) factors					
	0.10	8.9.2 Misapplication of AI systems that demonstrate realistic human behaviour					
_	8.10						
9	_	ion measures					
	9.1	General Transmonary					
	9.2	Transparency	∠3				



The is a new provider i arenade and chare publication at the limit below	This is a free preview.	Purchase the	entire publication	at the link below:
--	-------------------------	--------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation